

Incorporated in Victoria, 2014, Registration Number: A0061589C

The monthly magazine of the

North East Victoria Amateur Radio Club

<http://nevarc.org.au/>



An Affiliated club of Wireless Institute of Australia

An Affiliated club of Radio Amateur Society of Australia Inc.



Volume No: 08

Issue 11

November

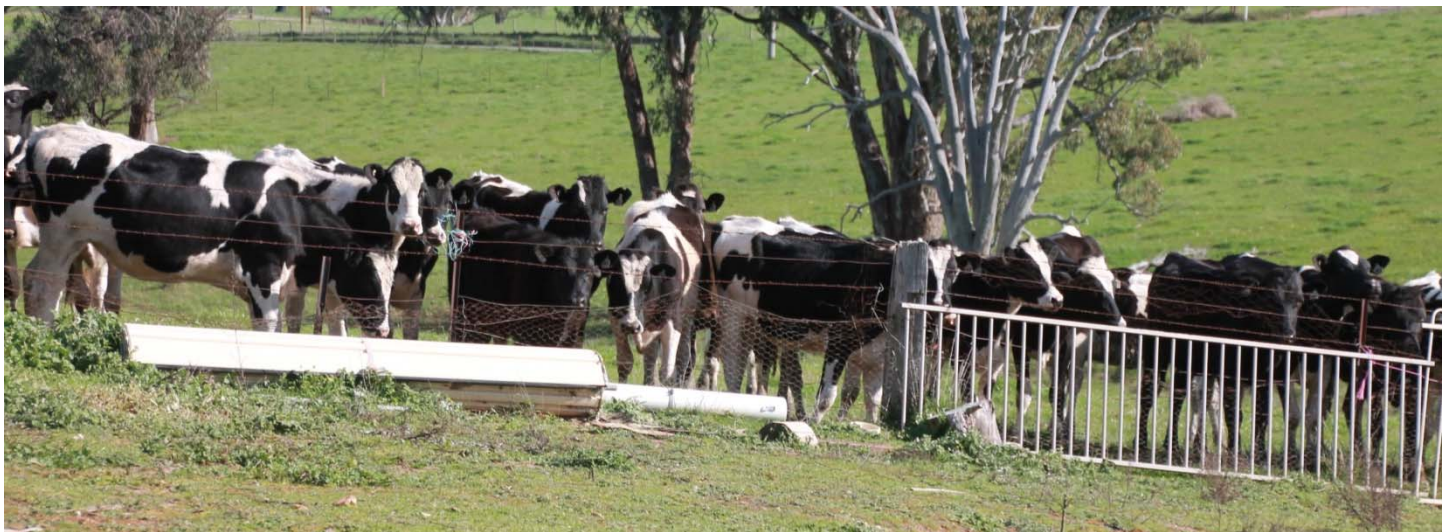
2021

Next Meeting 1.00pm Sunday 14th November

Due to changing COVID restrictions, often at short notice, details of the meeting will be emailed to members, so it may be either online or in person at the clubrooms

SPRING VHF - UHF FIELD DAYS November 27-28

SPARC Rosebud RadioFest ~ Deferred to Sunday, February 13, 2022



The Tangambalanga Bovine Wedding Choir

Brenton & Samantha Wedding	2
VK3WS Oscilloscope Input Protection Device	5
Over Voltage Protection VK3WS	3
GET THE 'LED' OUT	7
COVID-19 ROBOT	8
NEVARC Nets	15
NEVARC Club Profile	16

Brenton & Samantha Wedding



After 10 years together we thought we would make it official.

On Sunday the 12th September 2021 at 3pm, we had a COVID wedding.

That meant there were no guests except the chickens, cows and guinea fowl.

Riley (VK3FRSK) walked Samantha (no call sign) to the alter, to formally commit to Brenton (VK3CM).

It all happened in the paddock in front of the house with the lovely backdrop of the dam and a few antennas. The sun shone, the cows mooed (a lot) and the chickens clucked.

The whole day was filled with love and laughter.

It was one of the happiest days of our lives.

Now Brenton feels that I need to have a call sign since I am officially part of the family!





Wedding at Meadows Ranch





VK3WS Oscilloscope Input Protection Device

Oscilloscopes have very sensitive inputs and usually at 50 Ohm impedance. Unlike typical modern multi-meters (which often have protection up to around 600 Volts DC, Oscilloscopes will be destroyed if one attempts to measure high voltages.

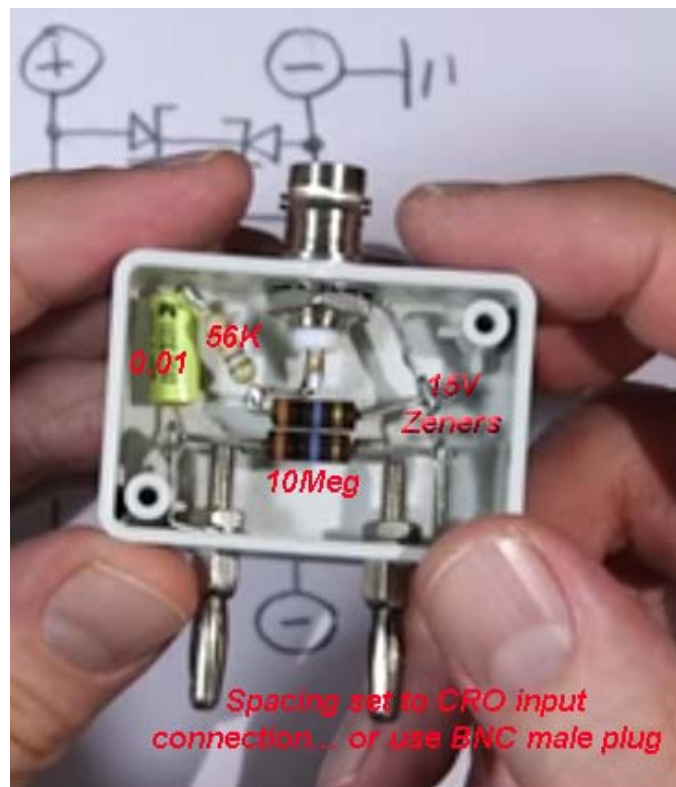
This device is intended to offer a degree of protection to safeguard the input circuitry of the oscilloscope against accidental probing of devices under test (DUT) where damaging voltage may be present unexpected or mistakenly probed.

Nothing can protect the Oscilloscope against foolhardy misuse.

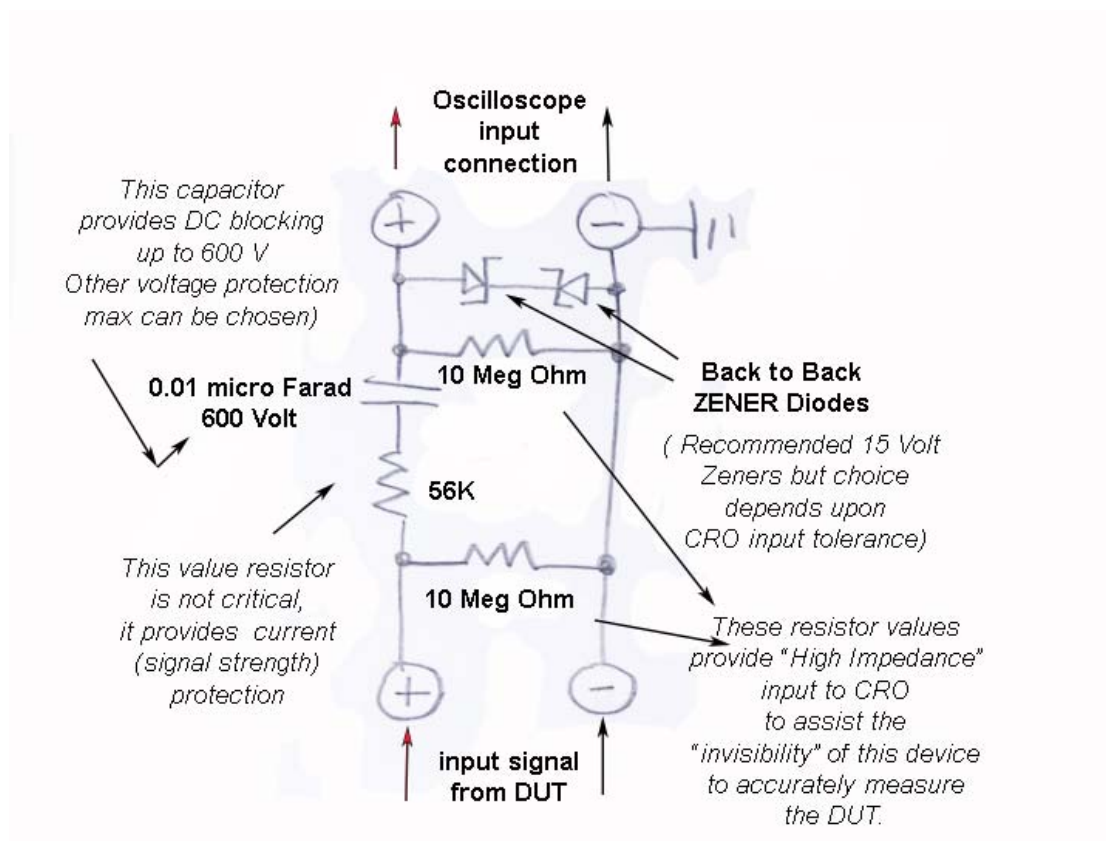
This device will work to minimise any damage caused by such excursions into "less than professional" behaviour that distracted technicians may encounter according to "Murphy's Law".

It is easy to build and not so critical in construction for most usual applications involving affordable CROs particularly at the lower Radio frequencies.

In order for this device to be "invisible" as an interface between the CRO and the DUT (device under test) it is important to pay attention to component types and values/lead lengths etc. as per the schematic.

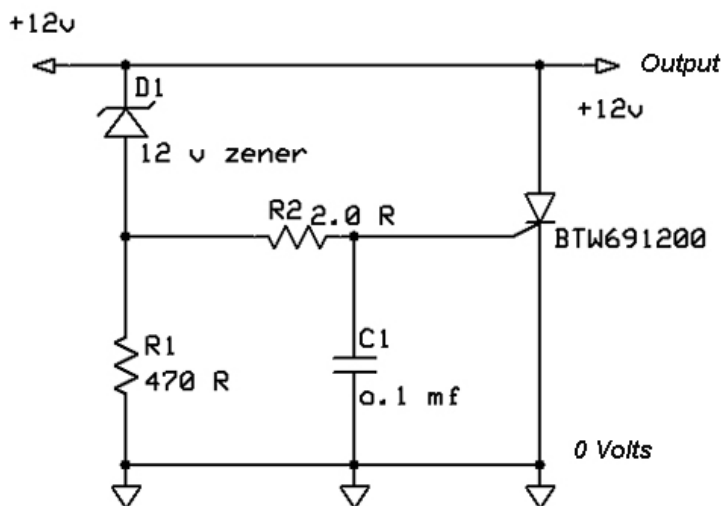


Construction can be as shown in the picture above in a plastic instrument box (49mm X 33mm X 19mm deep) using point-to-point connections or via a PCB as preferred. This picture shows the output to a CRO as "parallel single pin" connector such as used in older "analogue" type CROs but BNC lead and socket could be used since most modern CROs... use BNC male connector for signal input (on short coax lead if preferred).



Over Voltage Protection VK3WS

This schematic is a simple protection circuit which can be used to safeguard sensitive and expensive equipment from extreme damage caused by a power supply failure which can apply high voltage to a device for which it is designed to power. An example is a 13.8 Volt DC supply (linear or digital) designed to power an Amateur Radio Transceiver. It is common for such power supplies to use a regulated supply provided from a rectified AC supply, filtered and regulated from around 30 Volts DC regulated down to 13.8 Volts DC. If such a device was to fault at the regulator stage, it is possible that the full rectified 30 V+ is then applied to the transceiver which can cause catastrophic damage possibly destroying the expensive equipment.



"Crowbar" over voltage protection.

This device is designed to fit *between the power supply output terminals and the Transceiver input power connector*. This device is calibrated to allow DC voltage to pass un-effected to the output until it reaches approximately 14.7 Volts DC. At this voltage the SCR BTW69 is triggered and immediately conducts the V+ line down to earth. This voltage trigger point is used to prevent false triggering of the SCR especially in vehicle use where the vehicle's charging circuit can peak over 14.4 Volts. (Most electronic devices used in amateur radio are capable of accepting short term over voltages of around 16 to 17 Volts.)

This is referred to as a "Crowbar" protector because it is rather brutal in its operation... a last resort protector. The SCR is capable of passing more than 50 amps and up to 1200Volts for a short time (would need a hefty heat sink at these values) It is designed to blow the power supply fuse and shut things down before damage occurs. Ideally, a 20+ amp fuse in the input of this device will blow if the power supply fuse does not?) If you decide to place a fuse in the input of this device that would be good ... but it would need to be easily accessible to change if ever needed.

Hopefully.... this device will never need to do its job but a radio can easily be destroyed if fed with voltage much greater than the 13.8 V it was designed to work with. Modern Transceivers will not tolerate over voltage approaching 20V, sensitive expensive ICs will not tolerate such voltage excursions.

Installation: The PCB can be placed inside the power supply case *as close to the output terminals as practicable (keep leads short, pay particular attention to correct polarity)* The leads to the power supply output connectors should be removed and connected to the input leads of the PCB via a fuse of appropriate value. (20 to 25 amps should be enough for powering 100 Watt Transceivers). The output wires should then be connected to where the original power out wires was connected. The PCB can be stuck down to appropriate part of the case inside the supply using a removable adhesive.

Better still... mount the PCP in a small plastic box, place a fuse in the Red line at the input, poke the leads out each end of the box through grommets and you can use this as a portable unit for any power supply. Hopefully this will never be needed but better to be safe than sorry?

Components: Connecting cable High Temp. Silicon insulated Silver plated Multi stranded 50 amp, SCR is BTW69-1200N, 1200Volt 50 amp Thyristor. (any SCR capable of handling the max current will suffice and resistor R2 can be altered to turn on the scr at the required trigger point. (from 1 to 330 ohm should cater for most situations.

GET THE 'LED' OUT

If you ever get the feeling someone is watching you, maybe they are listening, too. At least they might be listening to what's coming over your computer speakers, with no thanks to a new attack called 'glow worm.'

In this novel attack, careful observations of a power LED on a speaker allowed an attacker to reproduce the sound playing thanks to virtually imperceptible fluctuations in the LED brightness, most likely due to the speaker's power line sagging and recovering.

You might think that if you could see the LED, you could just hear the output of the speaker, but a telescope through a window 100 feet away appears to be sufficient. You can imagine that from a distance across a noisy office you might be able to pull the same trick. We don't know - but we suspect - even if headphones were plugged into the speakers, the LED would still modulate the audio. Any device supplying power to the speakers is a potential source of a leak.

On the one hand, this is insidious because, unlike more active forms of bugging, this would be pretty much undetectable. On the other hand, there are a variety of low-tech and high-tech mitigations to the attack, too.

Low tech? Close your blinds or cover the LED with some tape.

High tech? Feed a random frequency into the LED to destroy any leaking information.

Super spy tech? Put fake speakers in front of your real speakers that silently playback misinformation on their LEDs.

Passive bugs are hard to find. Even a fancy junction detector won't tell you if your speakers are compromised by glow worm.

hackaday.com/2021/08/25/eavesdropping-by-led/

NEVARC News

The club magazine

All it needs is YOU

Send stories of your radio news to the editor

What have you been up to in these strange days of COVID?

magazine@nevarc.org.au

COVID-19 ROBOT



At Toa Payoh, a 10-minute ride-share drive from the heart of Singapore, there is a new sheriff in town. Its name is Xavier and it's a robot built to patrol the pavement of the busy shopping district within one of the city state's oldest housing estates.

Singapore has begun a trial using robots to monitor crowd behaviour.

It's charged with enforcing COVID-19 protocols such as mask-wearing, while deterring other bad civic habits such as smoking in banned areas and parking bikes in the wrong place. Xavier and its deputy - also called Xavier - have been zooming around the footpaths at Toa Payoh mall as part of a three-week government trial.

Armed with sensors, a dashboard and 360-degree cameras and with a direct line to a "control and command centre" staffed by real officers, their deployment is part of a multi-agency effort to assist policing with science.

The robots, which send alerts and data to a video analytics system with artificial intelligence capability, are designed to be able to approach the person responsible if they detect something out of order. They then display a message on their screen pointing out the indiscretion.

The other offences the Xaviers are on the lookout for are illegal street-food vending or hawking and the riding of mobility scooters and motorcycles on footpaths.

For shopkeepers at Toa Payoh, the robots' arrival has been a curiosity as much as anything.

Nobody wanted to give their names for interviews even though the Xaviers weren't in sight at the time. But locals reported the pair had not bothered many as they zipped back and forth.

In fact, the robots had more cameras on them with locals taking videos on their phones.

If it all seems more than a little Orwellian, though, that's not a new phenomenon here. Singapore last year set free a robotic dog called Spot to ensure walkers and runners were social distancing at Bishan-Ang Mo Kio Park, a large green space in the inner north of the island.

Drones have also been trialled as a way of enforcing social distancing and Singapore's Minister for Home Affairs K Shanmugam last month announced plans to more than double the number of police cameras in the south-east Asian nation from 90,000 to 200,000 by 2030.

Responding to suggestions that the mass surveillance represented an incursion on privacy, he told parliament "most people want to live in an environment which is safe and secure".

Singapore can claim to be that, with only Copenhagen and Toronto ahead of it on the Economist Intelligence Unit's latest safe cities list.

"The deployment of ground robots will help to augment our surveillance and enforcement resources," said Lily Ling, regional director of the Singapore Food Agency, one of the government departments behind the robot patrols.

"For instance, the surveillance of illegal hawkers can be manpower intensive as officers need to be deployed at various areas across the island. The adoption of robotics technology can be used to enhance such operations, and reduce the need for our officers to do physical patrols."

The government has also dispatched 3000 so-called safe-distancing ambassadors and enforcement officers to monitor public behaviour during the pandemic.

They appear regularly in shopping centres and restaurant and bar precincts, reminding people to congregate only in groups of five and to wear masks, which are mandatory outside the home unless eating or drinking.

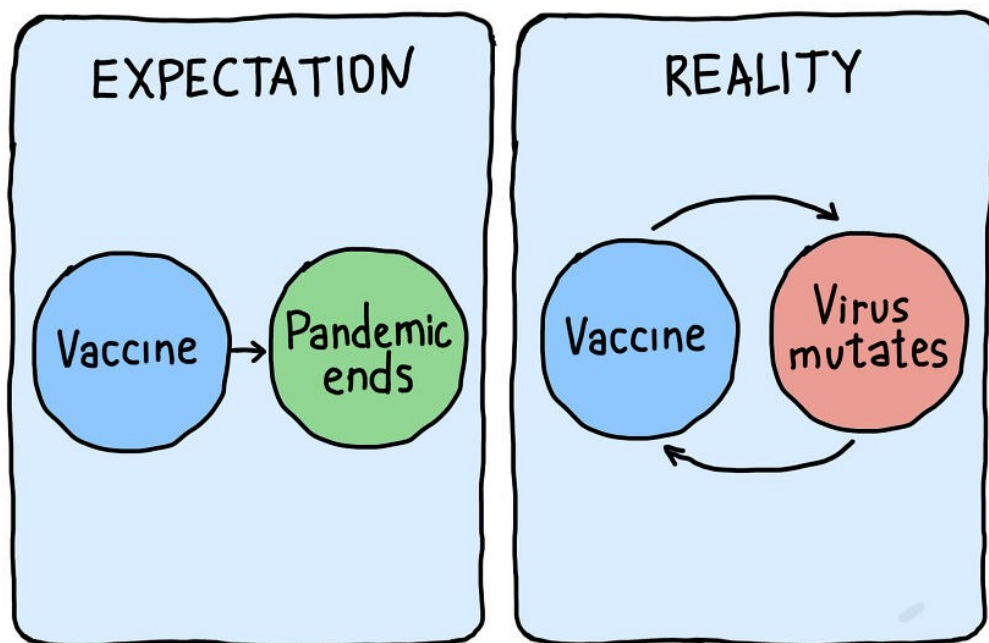
There have been several reports of abusive behaviour towards the ambassadors. But in the main, Singaporeans have greeted the virus-related restrictions with characteristic compliance - and it's not unusual for people to police each other.

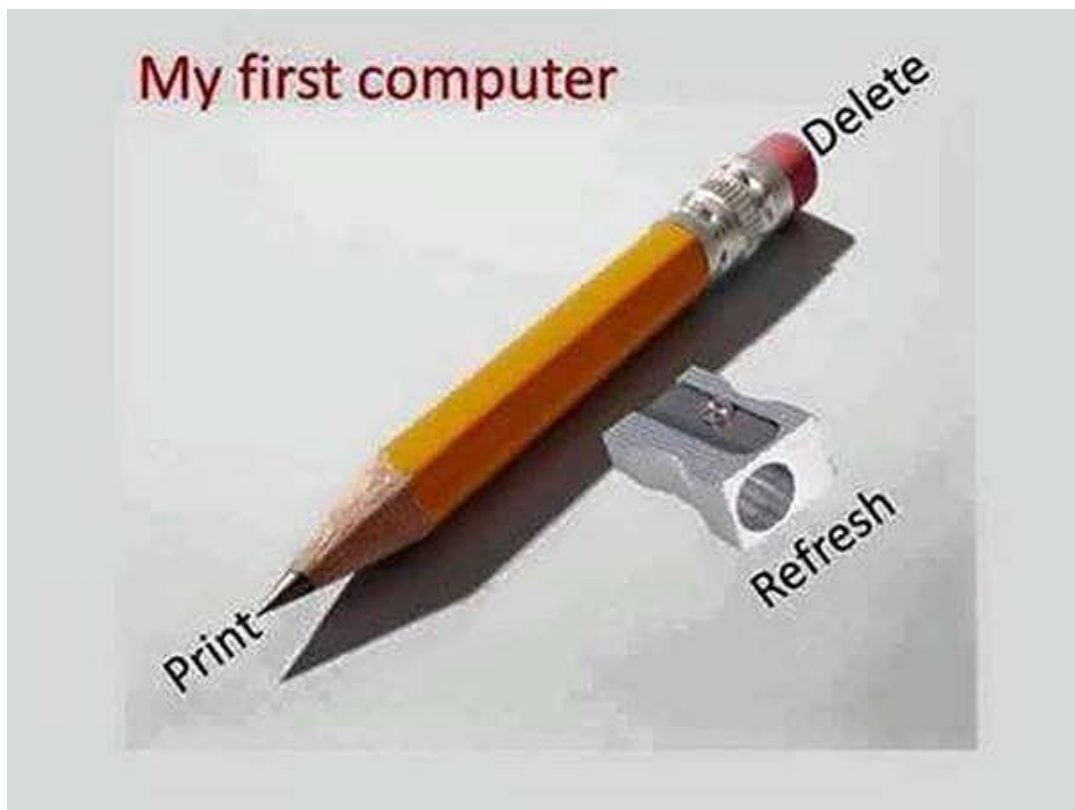


~Internet



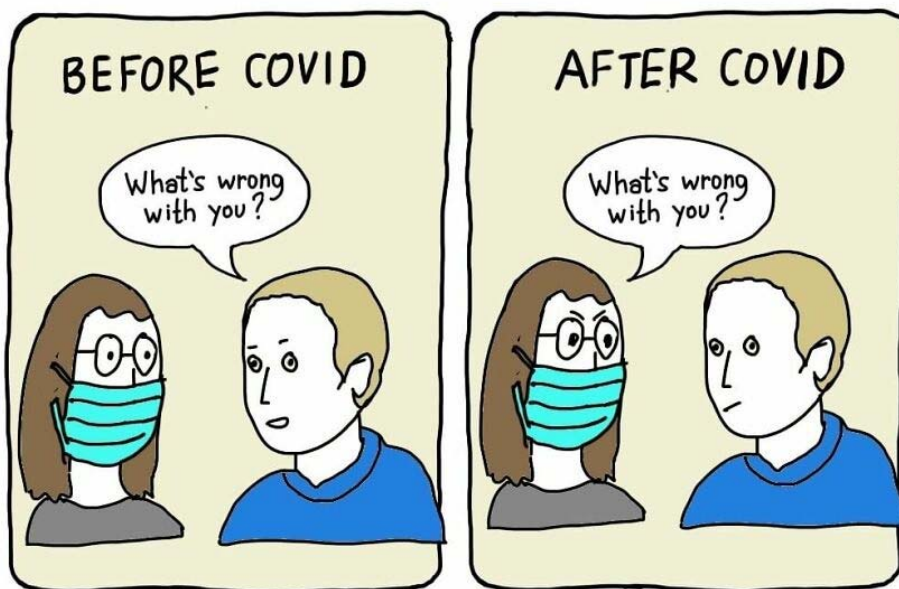
pandemic end







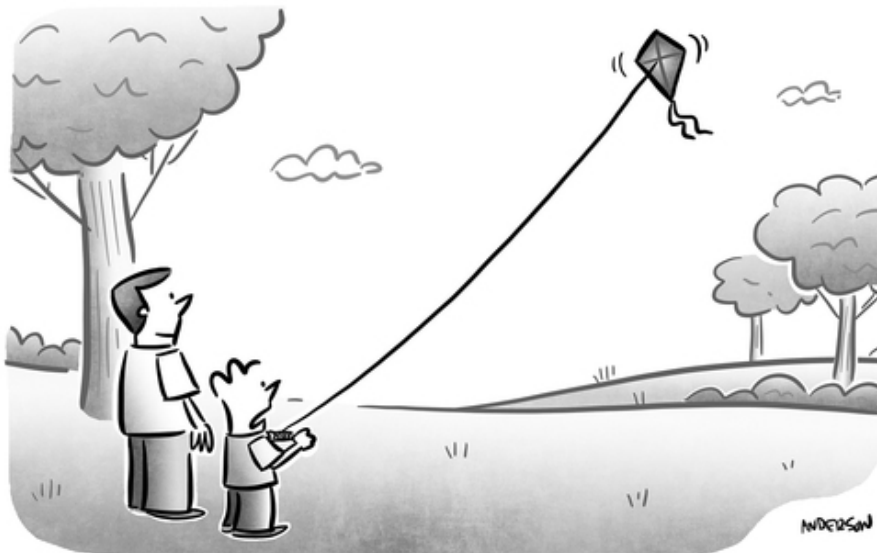
wearing a mask





"I'm less concerned with Moore's Law than I am with Murphy's Law at this point."

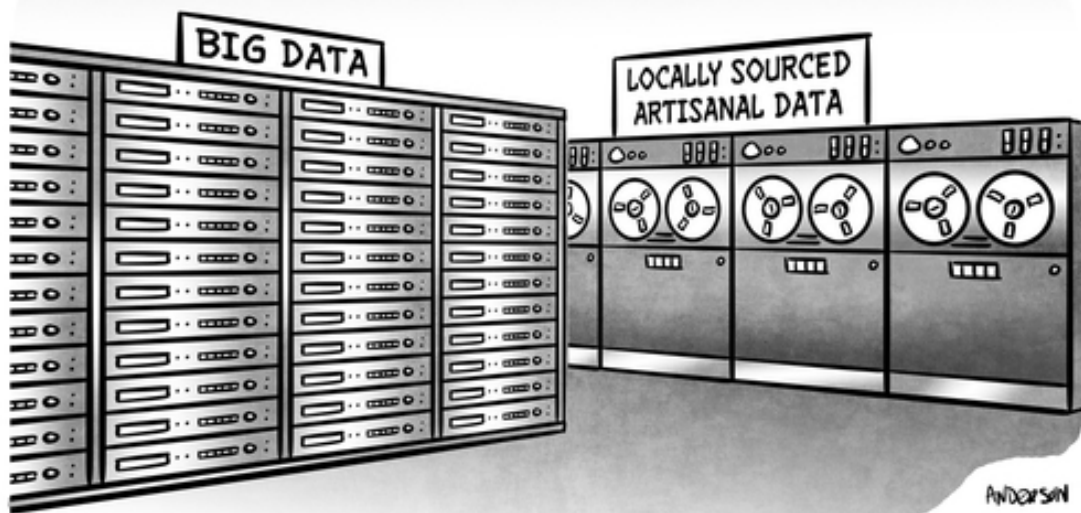
WWW.ANDERSTOONS.COM



"I know you didn't have smartphones or drones or the internet, but, seriously, this used to be fun for you?"



WWW.ANDERTOONS.COM



NEVARC Net



40 Meter Net

7 Days a Week

10am Local time

(East coast)

7.097 MHz LSB

Approximately + or – QRM

Hosted by Ron VK3AHR

“Australia Ham Radio 40 Meter Net”

President, VK3VS, Matt
Vice President, VK2VU, Gary
Secretary, VK2BFC, Frank
Treasurer, Amy Bilston



NEVARC CLUB PROFILE

History

The North East Victoria Amateur Radio Club (NEVARC) formed in 2014.

As of the 7th August 2014, Incorporated, Registered Incorporation number A0061589C.

NEVARC is an affiliated club of the Wireless Institute of Australia and The Radio Amateur Society of Australia Inc.

Meetings

Meetings details are on the club website, the Second Sunday of every month, check for latest scheduled details.

Meetings held at the Belviour Guides Hall, 6 Silva Drive West Wodonga.

Meetings commence with a BBQ (with a donation tin for meat) at 12pm with meeting afterwards.

Members are encouraged to turn up a little earlier for clubroom maintenance.

Call in Via VK3RWO, 146.975, 123 Hz tone.

NEVARC NETS

HF

7.097 MHz 7 Days a Week - 10am Local time

VHF

VK2RWD Wednesday - 8.00pm Local time

Benefits

To provide the opportunity for Amateur Radio Operators and Short Wave Listeners to enhance their hobby through interaction with other Amateur Radio Operators and Short Wave Listeners. Free technology and related presentations, sponsored construction activities, discounted (and sometimes free) equipment, network of likeminded radio and electronics enthusiasts. Excellent club facilities and environment, ample car parking.

Website: www.nevarc.org.au

Postal:

NEVARC Secretary
PO Box 8006
Birallee Park
Wodonga Vic 3690

Facebook: www.facebook.com/nevicARC/



All editors' comments and other opinions in submitted articles may not always represent the opinions of the committee or the members of NEVARC, but published in spirit, to promote interest and active discussion on club activities and the promotion of Amateur Radio.

Contributions to NEVARC News are always welcome from members.

Email attachments of Word™, Plain Text, Excel™, PDF™ and JPG are all acceptable.

You can post material to the Post Office Box address at the top of this page, or email magazine@nevarc.org.au

Please include a stamped self-addressed envelope if you require your submission notes returned.

Email attachments not to exceed 5 Mb in file size. If you have more than 5 Mb, then send it split, in several emails to us.

Attachments of (or thought to be) executable code or virulently affected emails will not be opened.

Other persons or radio clubs may edit or copy out such as they like from the magazine but a reference to NEVARC News is appreciated, except copyrighted (©) material or as otherwise indicated.

Other articles credited to outside sources should ask for their permission if they are used.

While we strive to be accurate, no responsibility taken for errors, omissions, or other perceived deficiencies, in respect of information contained in technical or other articles.

Any dates, times and locations given for upcoming events please check with a reliable source closer to the event.

This is particularly true for pre-planned outdoor activities affected by adverse weather etc.

The club website <http://nevarc.org.au> has current information on planned events and scheduled meeting dates.

You can get the WIA News sent to your inbox each week by simply clicking a link and entering your email address found at www.wia.org.au. The links for either text email or MP3 voice files are there as well as Podcasts and Twitter. This WIA service is FREE.